



Figure?

CO₂Me
$$\frac{1) \text{CbzCl}}{\text{i-Pr}_2 \text{NEt}}$$
 OCO₂Me $\frac{i \cdot \text{Pr}_2 \text{NEt}}{\text{i-Pr}_2 \text{NEt}}$ OCO₂Me $\frac{i \cdot \text{Pr}_2 \text{NEt}}{\text{i-14a (88\%)}}$ (+)-13a R = CH(CH₃)₂, (+)-14a (88%) (-)-13b R = CH₂CH(CH₃)₂ (+)-14a (88%) (-)-15a (78%) (-)-15a (78%) (-)-15b (80%) (-)-7b (84%) (-)-7b (84%)

Figure 3

CO₂Me

(-)-20p

(-)-20

q*L*-(-)

Figure 4

(-)-21

(a) (-)-7b, (MeO)₃CH/THF; (b) 18-c-6/KHMDS; (c) (COCI)₂, DMSO, DBU; (d) (-)-20, (MeO)₃CH/THF

(a) Wang resin, DEAD, PPh₃ (f) (31), $CH(OMe)_3/THF$ (c) PHCH2CH2CHO CH(OMe)₃/THF two treatments (d) KDHMS; (e) O₃, PPh₃ (b) TBAF NHTeoc (62% overall for 4 steps; 89% per step) (-)-2628 27 $(+)-22 R^1 = Teoc R^2 = OH$ 23; $R^1 = Teoc; R^2 = O$ 24: $R^1 = H$; $R^2 = 0$ O (+)-22

two treatments;

Figure 6

(a) (-)-7b, (MeO)₃CH/THF, 2 treatments; (b) KHDMS/18-c-6; (c) DMSO, (COCI)₂, DBU; (d) 31, (MeO)₃CH/ THF, 2 treatments; (e) KHMDS; (f) CsF/DMF, TBAF; (g)PhCH₂CH₂CHO, (MeO)₃CH/THF, 2 treatments